

30a, at which the process chambers and load lock chambers are connected, are claimed as extending in planes, respectively, that are parallel to one another.

The Examiner refers to the semiconductor manufacturing equipment of the present invention as being arranged in a Cartesian coordinate manner.

In rejecting claim 13, the Examiner relies primarily on the reference to Muka (USP 6,062,798). Muka discloses an embodiment of semiconductor manufacturing equipment in FIG. 2 in which the process chambers 26 – 29 and load-lock chambers 30, 31 are arranged in the so-called Cartesian coordinate manner. Muka also teaches such an arrangement as an improvement over the prior art cluster-type of equipment of FIG. 1 in which the process and load-lock chambers are arranged in a radial or polar coordinate manner.

Regardless of this disclosure in Muka, i.e., of an embodiment of semiconductor manufacturing equipment having a Cartesian coordinate arrangement, the Examiner turns to the embodiment of FIGS. 5A and 5B in considering the patentability of the present invention. In this embodiment, the process chambers 102 and the load-lock chambers 108 are instead arranged in a polar coordinate manner. The Examiner then takes the position that it would have been obvious in view of the teachings of Yanagita et al. (USP 6,672,358) to have modified the embodiment of FIGS. 5A and 5B of Muka because Yanagita et al. teach the equivalence of Cartesian and polar coordinate arrangements in semiconductor manufacturing equipment.

Applicants respectfully traverse this position because it conflicts with the disclosure of Muka. More specifically, the Muka reference must be considered in its entirety, including “portions that would lead away from the claimed invention”. See MPEP 2141.02 citing *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). The Muka reference itself, in the disclosure concerning the embodiment of FIG. 2 (col. 4, lines 7 – 25), describes how multiple process and load-lock chambers can be arranged in a Cartesian coordinate manner as an improvement over cluster-type equipment having chambers arranged in a polar coordinate manner (FIG. 1). Thus, the Muka reference teaches away from the Examiner’s position that polar and Cartesian types of arrangements are art-recognized equivalents.

Concerning the embodiment of FIGS. 5A and 5B, Muka discloses that the process chambers 102 and load-lock chambers 108 can be provided on two levels in a polar coordinate arrangement to improve throughput in such a polar coordinate arrangement (col. 7, lines 25 – 47). These teachings might suggest modifying the embodiment of FIG. 2 of Yanagita et al. so as to increase the throughput in the embodiment of FIG. 2 of Yanagita et al., but there is simply no suggestion from the Yanagita et al. reference that would have instead motivated one of ordinary skill in the art to have modified the embodiment of FIGS 5A and 5B of Muka so as to have a Cartesian coordinate arrangement.

In other words, if one of ordinary skill in the art were desirous of obtaining semiconductor manufacturing equipment in which the process and load-lock chambers had a Cartesian coordinate arrangement, that person could find such an arrangement in the Muka reference (embodiment of FIG. 2) and hence, there is no need to turn to the teachings of Yanagita et al. the rejection under 35 USC 103 should be withdrawn because the Examiner did not consider the portion of the Muka reference that leads away from the claimed invention, namely the disclosure in Muka of the embodiment of FIG. 2.


Secondly, even assuming, *arguendo*, that one of ordinary skill in the art would have somehow been motivated to have modified the embodiment of FIGS. 5A and 5B of Muka so as to have the chambers thereof re-arranged in a Cartesian coordinate manner, the resulting combination would still not meet Applicants' claimed invention. In particular, the robot of claim 13 is different from either of the robots disclosed in the Muka and Yanagita et al. references. For example, neither of the references disclose a robot comprising a wafer support member supported by a robot arm so as to be extendable and retractable independently of the robot arm at the terminal end of the robot arm. Also, neither of the robots disclosed in the references comprise a robot arm having the three degrees of independent movement set forth in claim 13.

For these reasons, namely because (1) the references provide no suggestion that would have motivated one of ordinary skill in the art to have modified the embodiment of FIGS. 5A and 5B of Muka so as to have a Cartesian arrangement instead of merely turning to the embodiment of FIG. 2 which provides the same, and (2) even if the embodiment of FIGS. 5A and 5B of Muka were modified so as to have a Cartesian arrangement the resulting modification would still have a robot different from that of claim 13, it is seen that the references do not render Applicants' claim 13 obvious under 35 US 103. Accordingly, early reconsideration and allowance of the claims are respectfully requested.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, PLLC

By:


Michael Stone
Reg. No. 32,442

Reg No 33289

for:

VOLENTINE FRANCOS, PLLC
One Freedom Square
Suite 1260
11951 Freedom Drive
Reston, VA 20190
Tel. 571.283.0720

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